MHRD | Government of India
Ministry of Human Resource Development

सत्यमेव जयते

Hydrologic Modeling and Climate Change

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Overview

This course is designed to integrate two major aspects of water resources management – ***hydrologic modeling and climate change***. The hydrology component of the course covers elements of hydrological modeling, precipitation analysis, watershed models for rainfall runoff modeling, hydrologic extremes, and application of entropy theory in hydrologic modeling. The climate change component includes learning the difference between climate change and climate variability, climate change projections, impact of climate change on water resources, and climate change adaptation and mitigation. The course focuses on developing understanding of hydrological processes and climate change that are fundamental for analyzing the impact of changing climate on water resources, and developing and implementing adaptive water resources policies. The course will include lectures, tutorials to solve practical problems and hands-on exercises on hydrologic models.

Objectives

The primary objectives of the course are as follows:

i) Expose participants to the fundamentals of Hydrology,
ii) Build confidence and capability amongst the participants in applied hydrology and climate change,
iii) Provide exposure to practical problems and their solution through case studies in hydrology and its modelling, and
iv) Enhance the capability of participants to hydrology and climate change related problems in engineering system.

Participants will be exposed to recently developed techniques of hydrological analyses and integration of hydrological modeling tools with climate change models/information.

Internationally acclaimed academics, researchers and practitioners with proven knowledge, experience, and demonstrable ability in teaching, consultancy, research, and training in the field of Engineering Hydrology and Climate Change will deliver lectures and discuss cases in the course. The course will be planned and offered as per the norms set by the GIAN programme.

Course participants will learn these topics through lectures and hands-on experiments. Also case studies and assignments will be shared to stimulate research motivation of participants.

Modules	**A: Basics of Hydrologic Modeling : Dec 05 – 09, 2016 @ GBPUAT, Pantnagar** **B: Advanced Hydrology and Climate Modeling : Dec 12 – 16, 2016 @ NIH, Roorkee** Number of participants for each course module will be limited to fifty.
You Should Attend If…	Participants from Industry, Research Organisations, Faculty and Students from all over the world who are interested in the course are welcome to register for the course.
Fees	The participation fees for attending the course are as follows: **Participants from abroad:** Any of one module: US $300, Both the modules: US $500 **Industry:** Any of one module: Rs. 8,000/-, Both the modules: Rs. 15,000/- **Faculty or Scientists of Research / Academic Institutions:** Any of one module: Rs. 6,000/-, Both the modules: Rs. 10,000/- **Academic /Research Institutions-Students:** Any of one module: Rs. 3,000/- Both the modules: Rs. 5,000/- The above participation fee includes soft copy of all instructional materials, computer use for tutorials and internet facility. The participants will be provided with single/double occupancy accommodation on ***payment basis*** at the university/NIH guest house. Hotel accommodation will be arranged on **payment basis** at nearby places, if requested. For more details please visit ***www.gbpuat.ac.in***

The Faculty

Prof. Vijay P. Singh is Distinguished Professor and Caroline & William N. Lehrer Distinguished Chair in Water Engineering, Department of Biological and Agricultural Engineering, and Zachry Department of Civil Engineering, Texas A & M University, College Station, Texas.

His research interests include Surface-water Hydrology, Groundwater Hydrology, Hydraulics, Irrigation Engineering, Environmental Quality and Water Resources, and Hydrologic Impacts of Climate Change.

His professional heights include **840 papers** published in refereed journals, 24 books, 57 edited books, 100 book chapters and many technical reports and special issues of journals. He is editor of many Journals. He has been awarded *2012 Texas A& M University Bush Excellence Award for Faculty in International Research; University Distinguished Professor Award 2013, Texas A & M University, 2013; and Lifetime Achievement Award, Environmental and Water Resources Institute, American Society of Civil Engineers, among more than 72 awards*. **http://baen.tamu.edu/people/singh-vijay/**

Dr. Sharad K. Jain has research, development and teaching experience of more than 30 years in the field of water resources. He is Scientist G and Head of Water Resources Systems Division at the National Institute of Hydrology (**NIH**), Roorkee, India (***www.nih.ernet.in)***. He was a Post-Doctoral fellow at the National Research Institute for Earth Science and Disaster Prevention (Japan) in 1993-94 and Visiting Professor at the Louisiana State University, Baton Rouge, USA, 2002-03. During Apr. 2009 – Apr. 2012, he was NEEPCO Chair Professor at IIT Roorkee. His research interests include Surface Water Hydrology, Water Resources Planning and Management, Impact of Climate Change, Application of Advanced Tools such as Artificial Neural Networks and Remote Sensing & GIS, and water governance.

Dr Jain has co-authored four books: a) *Water Resources Systems Planning and Management*, Elsevier, b) *Hydrology and Water Resources of India,* Springer, c) *Risk and Reliability Analysis: A Handbook for Civil and Environmental Engineers*, American Society of Civil Engineers, and d) *Water Resources Systems*, The Institution of Engineers (I). He has edited five books, wrote twenty book-chapters, nine articles in Encyclopedias, and more than 225 papers in journals, conferences, and seminars (Citations: 2200, H-index 23, Google scholar i10-index =37). He has organized > 30 short-term courses and worked on > 30 research and consultancy projects. He is a member of International Board of Advisors of the Journal of Hydrologic Engineering, ASCE, and member of the Editorial Board of the Hydrological Processes Journal (Wiley-Blackwell) and many national committees.

Dr Mrs. Jyothi Prasad is a Professor in the Department of Civil Engineering, College of Technology, G B Pant University of Agriculture and Technology, Pantnagar, Uttarakhand State. Her area of interest is *Hydrology* with specialisation in Water Shed Management, Irrigation Water Management, Water Resources Mgmt.

She got more than twenty eight years of teaching and industrial experience at different institutions/universities. She has more than fifty publications of National and International Journals / Conferences to her credit. She has organised more than ten training / workshop programmes for the faculty of engineering colleges, scientists, field engineers funded by DST, AICTE-ISTE, TEQIP WORLD BANK project etc and attended more than thirty six training programmes/workshops organised by UNESCO, DFID, SDC, DST, DOE, AICTE, ISTE, NAAC, ICH, NORAD, IGSH etc. ***www.gbpuat.ac.in***

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Course Co-ordinator

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